

Application No.: 09/920,335
Amendment dated: March 28, 2005
Reply to Office Action of December 14, 2004
Attorney Docket No.: 0016.0010US1

a.) Amendments to Specification

Replace the paragraph beginning at page 1, line 13, in the specification as originally filed, with the following rewritten paragraph:

--With advances in integrated circuit, microprocessor, networking and communication technologies, increasing numbers of devices, in particular, digital computing devices, are being networked together. Devices are often first coupled to a local area network, such as an Ethernet based office/home network. In turn the local area networks are interconnected together through wide area networks, such as ATM networks, Frame Relays, and the like. Of particular ~~notoriety~~ relevance is the TCP/IP based global inter-networks, Internet.--

Replace the paragraph beginning at page 1, line 20, in the specification as originally filed, with the following rewritten paragraph:

--As a result of this trend of increased connectivity, increasing numbers of applications that are network dependent are being deployed. Examples of these network dependent applications include but are not limited to, email, net based telephony, world wide web and various types of e-commerce. For these applications, success inherently means high volume of network traffic for their implementing servers. To ensure continuing success, quality of service through orderly and efficient handling of the large volume of network traffic has become of paramount importance. Various subject matters, such as scalability, distributive deployment and caching of contents, as well as achieving and maintaining service level goals or commitments by networking devices have become of great interest.--

Replace the paragraph beginning at page 2, line 4, in the specification as originally filed, with the following rewritten paragraph:

--The capabilities and capacity of a networking device are probably the primary factors in determining the networking device's ability ~~in~~ to meeting its service level goals/commitments, whether the goals/commitments are reliability or performance oriented. However, in a shared networked world, having plenty of capabilities and

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capacity in and of themselves does not automatically guarantee that the networking device will be able to meet its service level goals/commitments. Unexpected or unplanned surges/increases in "non-essential" or "superfluous" network traffic potentially could cause congestion, and adversely impacts the networking device's ability to service the "essential" network traffic.--

Replace the paragraph beginning at page 2, line 13, in the specification as originally filed, with the following rewritten paragraph:

--Various bandwidth reservations or priorities based schemes (attributed to individual packets or packet types and self-administered by the networking devices having the service level goal/commitments) are employed in the art to ensure that the appropriate service levels are provided. However, these schemes impose the burden on the networking device that is "struggling" to meet the service level goals/commitments, further compounding the problem. Moreover, the various schemes are tend to be complex and difficult to implement. Thus, alternate approaches to enhancing the likelihood of a networking device's ability to meet its service level goals/commitments are desired.--

Replace the paragraph beginning at page 6, line 14, in the specification as originally filed, with the following rewritten paragraph:

--Referring now first to Figure 1, ~~wherein~~ a block diagram illustrating a network view of the present invention, in accordance with one embodiment, ~~are is~~ shown. As illustrated, in accordance with the present invention, network traffic is distributively managed for a networking device, such as routing device 106, to enable the networking device to meet the service level goal(s) or commitment(s) for a group of network traffic, such as network traffic 107a, serviced by the networking device. For the illustrated embodiment, network traffic is distributively managed employing director function 102, augmented with sensor function 104. More specifically, director function 102, assisted by sensor function 104, is employed to reduce the negative impact of other network traffics, such as network traffic 107b, on the ability of routing device 106 to meet its service level goals or commitments for network traffic 107a. Typically, although not

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necessarily, the other network traffics to be regulated are other network traffics also serviced by the networking device of interest.--

Replace the paragraph beginning at page 8, line 5, in the specification as originally filed, with the following rewritten paragraph:

--In due course, director function 102 (assisted by sensor 104, for the illustrated embodiment) also distributively determines, away from routing device 106, whether the condition or conditions that cause the inability of routing device 106 to meet its service level goals/commitments for network traffics 107a are still present. If the condition or conditions are no longer present, director function 102 distributively determines, away from routing device 106, where in network 100 and by how much regulation should be moderated (i.e. de-regulating previously imposed regulations).--

Replace the paragraph beginning at page 14, line 1, in the specification as originally filed, with the following rewritten paragraph:

--For block 210, director function 102 may determine whether regulation may be relaxed by determining whether the conditions that caused network traffics 107b to be regulated remain present. If the conditions are no longer present, director function 102 determines where the regulation may be relaxed, e.g. at routing device 106, or other regulated locations in network 100, and additionally, the amount of deregulations at the selected de-regulation locations.--

Replace the paragraph beginning at page 15, line 21, in the specification as originally filed, with the following rewritten paragraph:

--Reporter function 304 is used to report the gathered network traffic data. More specifically, reporter function 304 reports the gathered network traffic data to director function 102. For the illustrated embodiment, the reporting reports are made periodically or on demand. The report may be made in any one of a number of formats, via any one of a number of communication protocols known in the art.--

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Replace the paragraph beginning at page 18, line 13, in the specification as originally filed, with the following rewritten paragraph:

--Referring now to fig. 8, wherein a component view of director function 102, in accordance with one embodiment is shown. As illustrated, director function 102 is also implemented on a standalone device outside of the monitored/regulated routers 106a-106b. Director function 102 includes send/receive function 802, analyzer 804, and regulator 806, operatively coupled to each other as shown. Send/receive function 802 is employed to receive network traffic data reported by sensor functions 104, and to send regulation/de-regulation instructions to the applicable sensor functions or the routers directly. Analyzer 804 analyzes the network traffic data reported to determine if the networking device of interest is meeting its service level goals/commitments, whether regulation/de-regulation actions need to be taken to regulate selected network traffics to enhance the likelihood of the networking device of interest being able to meet their service level goals/commitments, and alerts regulator 806 accordingly. In one embodiment, analyzer 804 determines whether the networking device of interest are is meeting its service level goals/commitments, and whether a group of other network traffics are to be regulated/deregulated, based on the reported data, as described earlier. Regulator 806 is used to determine the location or locations of regulation/de-regulation (i.e. the routers), and what the regulation/de-regulation actions should be.--

Replace the Abstract of the Disclosure paragraph beginning at page 32, line 3, in the specification as originally filed, with the following rewritten paragraph:

--One or more networking apparatuses are employed to practice a networking method that improves a first networking device's likelihood in meeting its service level goals/commitments for a first group of network traffic serviced by the first networking device. Determination is made, away from the networking device, on whether the first network device is meeting the service level goals/commitments for the first group of network traffic. Determination may include monitoring the first group of network traffic at or away from the networking device. If the service level goals/commitments are not being met, a second group of network traffic (also serviced by the first networking

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device) is regulated. Regulation may be made at the networking device or away from the network device. Additionally, if the condition for regulation is no longer presents, regulation may be moderated or removed. Further, the service level goals/commitments may include reliability and/or performance goals/commitments.--